

REMARKS

Claims 1-10, 12-20, 22-41, 44-52, 55 and 56 are pending in the application. Claims 29-35 and 48-52 are withdrawn and the remaining claims are rejected as obvious over a combination of art including Karacaoglu et al. (U.S. Patent No. 6,684,058), Lerman (U.S. Patent No. 5,604,789), and Elrefaie (U.S. Patent No. 6,243,577).

INTERVIEW

Applicants' undersigned representative held a personal interview with the Examiner at the U.S. Patent Office in July 6, 2005. Applicants would like to thank the Examiner for his time in that interview, and his helpful suggestions in further prosecution in the case. Applicants have amended the claims in line with those discussed with the Examiner during the interview, where, as noted, an agreement was reached that such amendments would define over the art of record but that a further search would be required. Applicants herein file a request for continued examination (RCE) so the amendments may be entered after Final and the Examiner can proceed with any further searching in the examination.

SECTION 103 OBVIOUSNESS REJECTIONS

Independent claims 1,13, 22, 36 and 44 have been amended to further clarify the invention and define over the prior art. Independent claim 55 has been canceled.

More specifically, as presented in a proposed amendment during the interview and as discussed therein, Applicants have amended claim 1 to recite a wireless communication system comprising a base station with an antenna which is configured predominately to communicate with customer equipment in a first wireless frequency band. That is, the base station may be considered a legacy base station which communicates with customer equipment such as mobile or cellular telephones. The system also includes a first translator system that has first RF signals located in the first wireless frequency band and, as an output, of second RF signals located in a second wireless communication frequency band. The base station communicates with a remote system with RF signals in the second band, and the remote system has first and second paths. In the first path, the second translator system translates the frequency of the second RF signals back into the first wireless communication frequency band in order to communicate with customer equipment, such as the legacy equipment noted with respect to the base station. The remote system however also includes a second path that is operable for outputting RF signals directly in the second wireless communication frequency band without frequency translation for communicating with additional customer equipment that is not operating in the first wireless communication frequency band. The combination of cited art clearly does not teach such an invention as claimed.

Specifically, the base reference of Karacaoglu et al. teaches a legacy base station which operates in PCS and communicates with another remote base station utilizing frequency translation. This is, the PCS band is translated to an ISM band and then back to the PCS band at the remote station. There is absolutely no teaching in the Karacaoglu et al. reference regarding a second path at the remote system which is

operable for outputting RF signals in a second wireless communication frequency band without frequency translation. The examiner recognizes as such in the most recent office action.

The examiner then turns to the Lerman reference and states in figure 3, and associated text that the Lerman reference teaches a second translator system operable to translate the frequency of the RF signals into a first frequency band and into output second RF signals on line 18 directly into the second wireless frequency band without frequency conversion. However, element 18, as pointed out in the interview, is a connection to a mobile switching center for the base station which is generally an input line at the base station. Therefore, Lerman does not teach a second path operable for outputting second RF signals as suggested or argued by the Examiner in the office action. Rather, the Lerman reference is somewhat similar to the Karacaoglu et al. reference in that it teaches a base station for base transceiver 14 which communicates with customer equipment in a first frequency and then performs frequency conversion to transmit a signal to a more remote environment 40 such as a house or office building. At the remote environment 40, the second converter 44 converts a signal back to the original frequency and then communicates with the customer equipment. That is, essentially one path exists at the remote system or remote location 40, and it involves a translation back to the starting band. There is no teaching of the first path and the second path. It should be noted that the first path and second path refer to the processing of the signals at the remote location as claimed, not at the original base station.

Therefore, there is no teaching in Lerman to make up for lack of teaching in Karacaoglu et al. regarding a remote system that includes a first path and a second

path wherein the first path provides a translation back to a first wireless frequency band and a second path which maintains the RF signals at a second wireless band without frequency translation for communicating with additional customer equipment which does not operate in the first wireless band. Therefore, at the remote system, the coverage of the system is significantly expanded. Accordingly, independent claim 1 defines over the cited combination of Karacaoglu et al./Lerman. In fact, as noted, those references were essentially cumulative and they do not provide any additional teaching regarding a remote system providing first and second paths. Dependent claims 2-8, 10-12 each depend from claim 1 and include the limitation therein. Furthermore, those claims recite unique combinations of elements not taught by this cited art. As such, those dependent claims are also in allowable form.

Independent claim 13 has been similarly amended to recite a second transceiving system that is remote from the first transceiving system and has a first path and a second path. Wherein with the first path, the remote transceiving system converts RF signals back to the original first band, but in the second path the RF signals are directly output in the second band without frequency translation for communicating with additional customer equipment not operating in the first band. For the same reasons mentioned above, claim 13 is allowable over the cited art of record. Furthermore dependent claims 14-19 recite unique combinations of elements which are not taught by the cited art and thus are also in an allowable form.

Claim 36 recites a method for increasing capacity in a wireless communication system. That method includes translating RF signals between a first band and a second band and transceiving the second band RF signals at a base station wherein the base station is configured to predominately communicate with customer equipment

in a first band. Claim 36 further recites, at a remote antenna system, selectively directing the RF signals of the second band in first and second paths wherein in the first path, the RF signals are translated back to the first band but in the second path the RF signals are maintained in the second band without translation for communicating with additional customer equipment that does not operate in the first band. For the reasons as noted above with respect to claims 1 & 13, claim 36 is also in an allowable form. Dependent claims 37-41 and 43 each depend from claim 36 which further reciting unique methods which are not taught by the cited art. Therefore, those claims, as well, are allowable and are not rendered obvious by the cited art.

Claim 22 recites a wireless communication system including a base station and a remote antenna system that is remote from the base station. The base station has a translator system which takes RF signals in the first band and translates them to a second band. The second band is then utilized to communicate with the remote antenna system. The remote antenna system includes a second translator system which is operable to translate the second band signals further into a third RF band different from the first and second bands. The remote translator system also outputs the RF signals directly in the second band without further translation to communicate with customer equipment not operating in the third band. As discussed above, the Karacaoglu et al./Lerman reference teaches merely the original translation where signals are translated to a band at a base station and then translated back to that same original band in a single path at the remote station as illustrated in figure 3 of Lerman. There is no teaching with respect to utilizing the remote system to not only translate back to the original frequency, but also to maintain RF signals of the second frequency thereby further expanding the amount of customer equipment which may be addressed

by the remote system. Accordingly, independent claim 22 is not rendered obvious by the Karacaoglu et al./Lerman combination of references.

Dependent claims 23-26 and 28 each depend from claim 22 and further recite a communication system including combinations of elements which are not rendered obvious by the cited art.

Similarly, independent method claim 44 recites a method for increasing the capacity in a communication system or where first RF signals are translated from a first band to a second band and then transceived with a remote system wherein the second band signals are translated to a third band but also output directly in a second band for communicating with additional customer equipment that is not operable at the third band frequency. For the reasons as noted above, claim 44 is also allowable over the cited art. Claims 45-47 these depend from claim 44 and further recite the unique methodology not rendered obvious by the cited art.

The combination of the Karacaoglu et al./Lerman references were also combined with Elrefaie. Elrefaie is essentially referred to for teaching a MMDS band or LMDS band. The Elrefaie reference does not provide the teaching lacking in the base reference combination such that the three references combined would render obvious the pending invention recited in any of the pending claims.

CONCLUSION

Accordingly, Applicants submit that all currently pending claims are in allowable form and respectfully request that the examiner indicate their allowability at his earliest convenience. If any issues remain the case it will be handled in an expedited fashion, such as through telephone, interview, or an examiners amendment, the examiner is certainly encouraged to telephone the applicants undersigned representative.

Applicants enclose a check for \$790.00 for filing a Request for Continued Examination (RCE) with this Response. Applicants know of no fees due herein with this submission. However, if any charges or credits are necessary, please apply them to Deposit Account 23-3000.

Respectfully submitted,

WOOD, HERRON & EVANS, L.L.P.



Kurt A. Summe

Reg. No. 36,023

2700 Carew Tower
Cincinnati OH 45202
(513) 241-2324 (voice)
(513) 421-7269 (facsimile)